CLAIMS

1. A disc brake rotor having a central hub coaxial with and supporting annular rings which form an inboard brake disc and an outboard brake disc for engagement with brake pads, said inboard disc and said outboard disc maintained in a parallel spaced apart configuration by pillars with channels defined between said pillars whereby in use of the rotor air is drawn in through vent means and then radially outwardly through said channels as the rotor turns, said pillars arranged in repeating clusters of six with each cluster in cross section including radially aligned inner and outer pillars with pairs of radially aligned intermediate pillars positioned symmetrically one pair on each side of a radially aligned central axis defined by said radially aligned inner and outer pillars; each pair of said pairs of radially aligned intermediate pillars defining a channel between the pillars comprising said pair; said channel offset from a radially aligned direction.

2. The disc brake rotor as claimed in claim 1 wherein there are hat sides which are inclined outwardly towards the base of said hat and the outer periphery of the hat leads into a heat dam.

3. The disc brake rotor as claimed in claim 2 wherein

said vent means include inlet vents on the outboard side located in an outer face of said heat dam.

4. The disc brake rotor as claimed in claim 3 wherein said vent means further include inlet vents on the inboard side of said rotor.

5. The disc brake rotor as claimed in claim 4 wherein ports for said inlet vents on the inboard side of the rotor are located between an inner periphery of one of said rings and a contoured inlet horn formed by an inboard face of said hat sides.

6. The disc brake rotor as claimed in claim 5 wherein the inlet vents on the inboard and outboard sides of the rotor lead into said channels between said rings, said channels being defined by pillars.

7. The disc brake rotor as claimed in claim 6 wherein said pillars are arranged in clusters with each cluster being symmetrical with respect to rotational directions of the rotor.

8. The disc brake rotor as claimed in claim 7 wherein each cluster defines a respective pair of the channels and cooling air passes equally through one or the other thereof in accordance with the direction of rotor rotation.

9. The disc brake rotor as claimed in claim 8 wherein each cluster includes pillars which in cross-section are of elongated triangular shape and have overlapping

edges to define said pair of the channels.

10. The disc brake rotor as claimed in claim 9 wherein each cluster further includes inner pillars which have an elongated diamond shape in cross-section and alternate with pillars which are triangular or bell shaped in cross-section, said inner pillars being adapted to deflect and draw cooling air from said inlet vents into said channels.

11. The disc brake rotor as claimed in claim 1 wherein said repeating clusters of six pillars are circumferentially disposed between said annular rings at angular intervals of 20 degrees.

12. The disc brake rotor as claimed in claim 11 wherein each outer pillar of said radially aligned inner and outer pillars is in a cross section form approximating that of an isosceles triangle; the base of said triangle adjacent to the outer periphery of said annular rings.

13. The disc brake rotor as claimed in claim 12 wherein each inner pillar of said radially aligned inner and outer pillars is in cross section of oviform or diamond shape; the log axis and said oviform shape radially aligned.

14. The disc brake rotor as claimed in claim 13 wherein each adjoining pair of said repeating clusters of six pillars is symmetrical about a line defined by an

intermediate radially aligned inner pillar and outer pillar.

15. The disc brake rotor as claimed in claim 14 wherein said outer pillar is of a cross section form approximating that of a tear drop; the base of said tear drop coincident with the outer periphery of said annular rings.

16. The disc brake rotor as claimed in claim 15 wherein said intermediate radially aligned inner pillar is in cross section of a form approximating that of a bell the base or mouth of the bell adjacent to the inner periphery of said annular rings.

17. The disc brake rotor as claimed in claim 16 wherein each said cluster of six pillars includes two symmetrically opposed pairs of intermediate pillars; each pair of said opposed pairs of intermediate pillars defining an air flow channel adapted to dissipate heat from surrounding regions of said discs.

18. The disc brake rotor as claimed in anyone of claim 1 wherein said repeating clusters of six pillars are circumferentially disposed between said annular rings at angular intervals of 10 degrees; adjoining pairs of clusters overlapping so as to share a pair of said radially aligned intermediate pillars.

19. The disc brake rotor as claimed in claim 17 wherein each one of said repeating clusters of six pillars is symmetrical about a central axis defined by a radially aligned inner pillar and outer pillar.

20. The disc brake rotor as claimed in claim 18 wherein each outer pillar of said radially aligned inner pillar and outer pillar is in a cross section form approximating that of an isosceles triangle with rounded base; said base adjacent to the outer periphery of said annular rings.

21. The disc brake rotor as claimed in claim 19 wherein alternate ones of inner pillars of said radially aligned inner pillar and outer pillar are in cross section of oviform or diamond shape and bell shape.

22. The disc brake rotor as claimed in claim 1 wherein patterns of air flow are induced by rotation of said rotor; aid air flow directed from the inner periphery of said rings through channels between selected pillars of said repeating clusters of pillars to exit from said rotor at the outer periphery of said rings.

23. The disc brake rotor of claim 22 wherein said patterns are of said air flow and an anti-clockwise rotation determining a second pattern; said second pattern being the mirror reversed of said first pattern.